BIOGRAPHIC AND PERSONAL FACTORS THAT AFFECT IMPACT OF ENTREPRENEURSHIP EDUCATION IN GHANAIAN POLYTECHNICS

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ABSTRACT

This paper seeks to investigate the effect of biographic and personal attributes on the impact that entrepreneurship education makes on students in Ghanaian polytechnics. A quantitative and descriptive research technique is adopted. The population of this study is polytechnic graduates who have been active entrepreneurs for at least two years. A sample size of 205 participants is used. One-way Analysis of Variance (ANOVA), independent samples t-test and Kendall's tau-b correlation test are used in presenting findings. Findings show that impact of entrepreneurship education in Ghanaian polytechnics is influenced by the factors of gender, academic capability, employment status, financial status, parenting status, marital status and type of school. It is recommended that tertiary institutions in Ghana consider these factors in designing curricula, recruiting tutors, developing teaching methods, designing admission criteria and acquiring teaching materials for entrepreneurship education in Ghanaian polytechnics and other tertiary institutions.

KEYWORDS: Entrepreneurship, Education, Entrepreneurship Education, Impact, Polytechnics, Biographic Factors

INTRODUCTION

Throughout the world, entrepreneurship is known to be a primary endeavor of job creation (Honu & Gakpe, 2006). Owing to its utmost relevance to nation building, entrepreneurship is one of the few academic disciplines enshrined in the tertiary curriculum throughout the globe (McMillan & Long, 1987). Entrepreneurship is defined as a process of identifying and starting a business venture, sourcing and organizing the required resources and taking both the risks and rewards associated with the venture (Reynolds, 2010; Shane, 2003). Personally, entrepreneurship is thought to involve pulling resources together to start a business in the face of risks whilst aiming to earn and maximize returns in the business.

The term "entrepreneur" was first used in 1723 and implies qualities of leadership, initiative and innovation in manufacturing, delivery, and services (Stuart & Des, 2000). Economist Robert Reich has called team-building, leadership and management ability essential qualities for the entrepreneur (Reynolds, 2010). The entrepreneur is a factor in microeconomics, and the study of entrepreneurship reaches back to the work in the late 17th and early 18th centuries of Richard Cantillon and Adam Smith, which was foundational to classical economics (Stuart & Des, 2000). In the 20th century, entrepreneurship was studied by Joseph Schumpeter in the 1930s and other Austrian economists such as Carl Menger, Ludwig von Mises and Friedrich von Hayek (Osnabrugge & Robinson, 2000; Stuart & Des, 2000). The term "entrepreneurship" was coined around the 1920s (Osnabrugge & Robinson, 2000), and became something of a buzzword beginning about 2010, in the context of disputes which have erupted surrounding the wake of the Great Recession (Reynolds, 1997). Education has served as the medium of massive disputes and argument about the concept of entrepreneurship.

Entrepreneurship education has served a vital role in equipping people with the basic skills and competences for creating businesses. According to Lundstrom & Stevenson (2005), it is for the sake of the practicality of its education that entrepreneurship is mostly reserved to tertiary education in many sectors. Thus, education given to students on entrepreneurship is expected to help them set up businesses. This role of entrepreneurship in tertiary education is grossly underplayed (McMillan & Long, 1987; Veciana et al. 2005; Kuratko, 2005). Even in developed countries of the world such as Britain, Germany, United States of America and Italy, research has shown that entrepreneurship education is not serving its role effectively (Kuratko, 2005).

STATEMENT OF THE PROBLEM

To a larger extent, entrepreneurship education in Africa for that matter Ghana is not yielding expected results (Honu & Gakpe, 2006). Tertiary education curriculum in Ghana shows that nearly all graduates of tertiary institutions in Ghana had access to, at least, a year's entrepreneurship education. Conversely, most of Ghana's graduates are unable to create jobs, though they have been endowed with the skills and knowledge to, at least, employ themselves (if situations demand) after graduation (Trade Union Congress, Ghana, 2013). TUC-Ghana (2013) has argued that the inability of graduates to savor entrepreneurship education by creation jobs for themselves is attributable to lack of impact of teaching and learning of the entrepreneurship subject in tertiary institutions. Lack of impact of entrepreneurship education on graduates and students has been blamed by Wilson & Peter (2006) on the fact that entrepreneurship teaching methods and curricula are not designed to suit the personalities of students and lecturers. This is premised on the argument that the impact of entrepreneurship education on students is influenced by the biographical attributes of students and lecturers such as gender, marital status, parenting status and income (Wegner, 2011; Mathews et al., 2003; Skinner, 1963).

The problem is that most teaching and learning methods of entrepreneurship education in Ghana do not recognize these biographic attributes of participants of teaching and learning (i.e. students and teachers). To provide a basis for factoring these biographic features in designing methods and curricula of entrepreneurship education in Ghana, this study seeks to identify the extent at which some biographic features of students influence the impact of entrepreneurship education. This is done at the polytechnic level, since polytechnics have a more critical role in practical training and provision of human resources for industry in Ghana.

RESEARCH OBJECTIVE

This paper seeks to identify how human factors; namely gender, level of education, employment status, financial status, parenting status, marital status and type of school affect the impact of entrepreneurship education in Ghanaian polytechnics.

REVIEW OF LITERATURE

The idea that biographic attributes affect the impact of entrepreneurship education on students is rooted in theory and research. This section reviews theories and studies that make a bearing with the subject matter of this paper.

The Five Factor Model (FFM) is the primary basis of arguing the relationship between biographic human attributes and the impact of entrepreneurship education. This model is the formal way of describing the "Big five personality traits" (Costa & McCrae, 1991), which are the five broad dimensions of personality that are used to describe human personality (Mathews et al. 2003; Wegner, 2011). The Big Five factors are openness, conscientiousness,

extraversion, agreeableness, and neuroticism (Costa & McCrae, 1991). Under each factor, a cluster of correlated specific traits is found. For example, extraversion includes such related qualities as gregariousness, assertiveness, excitement seeking, warmth, activity, and positive emotions (Wegner, 2011; Costa & McCrae, 1991).

Wegner (2011) argues in the line of this model that human understanding of things taught or learned is influenced by these five traits of personality. These five traits are further subject to gender, income, culture, religion and other biographic human attributes (Wegner, 2011; Mathews et al. 2003; Costa & McCrae, 1991). It is of this reason that people of different sex, exposure to education, income, culture and parenting status have varying level of comprehension of the same taught or/and learned subject in a class (Wegner, 2011; Mathews et al., 2003).

The Social Learning Theory argues that learning is a cognitive process that involves the social environment (Bandura, 1963). It is said to take place purely through observation or direct instruction, even in the absence of motor reproduction or direct reinforcement (Bandura, 1963; Skinner, 1963). In addition to the observation of behavior, learning also occurs through the observation of rewards and punishments, a process known as vicarious reinforcement (Bandura, 1963). The theory expands on traditional behavioral theories, in which behavior is governed solely by reinforcements, by placing emphasis on the important roles of various internal processes in the learning individual. According to Skinner (1963), these internal processes interplay with the learner and sometimes the teacher's biographic attributes such as sex, income, marital status, culture and race. Skinner (1963) argues on the basis of the Social Learning Theory that the way a person reacts and responds to learning or teaching is influenced by the social environment and such attributes as gender, financial status of learner or parents, culture, religion and other biographic features.

Having discussed the Five Factor Model (Costa & McCrae, 1991) and the Social Learning Theory (Bandura, 1963), it is evident that the approach to teaching and learning of entrepreneurship and its impact on students are influenced by such demographic attributes as gender, income, culture, religion, level of education, employment status and type of social environment.

Wilson & Peter (2006) embarked on a meta-analysis that proves to argue the relationship between biographic human attributes and impact of entrepreneurship education. Findings in their study show that such attributes as gender, culture, income, parenting status, marital status, social environment and the like drive the course of impact that teaching and learning makes on students and teachers. Other studies such as those of Veciana et al. (2005), Boyle (2001) and Kuratko (2005) convey similar notions and arguments. Even so, none of these studies could reveal the effect of such biographic factors on the impact that entrepreneurship education makes on students in Ghana.

HYPOTHESES

Based on reviewed literature and research problem, this paper seeks to test the following hypothesis at 5% significance level:

H_{01}: Impact of entrepreneurship education in Ghanaian polytechnics is not influenced by each of gender, academic capability, employment status, financial status, parenting status, marital status and type of school.

H_{11}: Impact of entrepreneurship education in Ghanaian polytechnics is significantly influenced by each of gender, academic capability, employment status, financial status, parenting status, marital status and type of school.

RESEARCH VARIABLES

Dependent Variable

The dependent variable is impact of entrepreneurship education in Ghanaian polytechnics. This was measured as participants' financial performance in their businesses. The assumption of this measurement was that the impact of entrepreneurship education at the polytechnic level translated into academic performance and the ability of participants to grow their businesses. The researcher ensured that participants did not upgrade their education as at the time of the study. This was to make room for measuring only the impact of polytechnic entrepreneurship education.

Independent Variables

These constitute gender, level of education, employment status, financial status, parenting status, marital status and type of school.

METHODOLOGY

The study involved a quantitative research paradigm, survey and secondary data analysis. The quantitative research paradigm was employed so that reliability and validity could be determined for the study. This design, coupled with the survey research design, made way for generalizing findings on Ghana. The study was partly a secondary data analysis, as it employed existing data on the financial performance of the businesses of alumni (who were currently entrepreneurs) of polytechnics in Ghana.

The population of this study was graduates from eight (8) polytechnics who were identified as permanent entrepreneurs. The sampling frame of this study was population members who had been entrepreneurs for at least two (2) years and who had not acquired any higher education after their polytechnic education. The population of members of this sampling frame was 440.

The simple random sampling technique; thus the table of random numbers, was used to sample 205 participants using the theoretical sample size table of Krejcie & Morgan (1970). The simple random sampling, a probability sampling method, was used to enable the researcher to generalize findings over Ghanaian polytechnics.

Data employed in this study was continuous secondary data. Meanwhile, they were considered with regard to gender, level of education, employment status, financial status, parenting status, marital status, academic ability (based on grades of participants on entrepreneurship) and type of school (i.e. type of polytechnic) of participants. These data constituted aggregated annual revenues generated in the businesses of participants from 2005 to 2012.

A greater part of data was taken from admission forms completed by participants when applying for admission to the various polytechnics. Some data were also taken from participants' academic records and alumni information existing in the various polytechnics. Annual revenues were supplied by participants through contacts provided by participating polytechnics.

Data validity was guaranteed in this study, as data was carefully extracted from the databases of the chosen polytechnics. Moreover, the accuracy and correctness of this data was double-checked from National Board for Tertiary and Vocational Examinations (NABTEX), Ghana. Annual revenues provided by participants corresponded with tax invoices, and this suggests a high level of these data's credibility.

The Statistical Package for the Social Sciences (SPSS) and Ms Excel were used to analyze data. The first research hypothesis was tested using independents samples student's t-test (i.e. for two groups like 'gender') and one-way Analysis of Variance (ANOVA) (i.e. for three or more groups like 'level of education'). The second research hypothesis was analyzed using partial correlation test. Since data was continuous in nature, the above-named parametric statistical tools were appropriate for data analysis. However, the Shapiro-Wilk test of normality was used to identify whether data was normally distributed. Non-normal data were standardized by taking their inverse and natural logarithm.

RESULTS

This section presents findings of this study. All tests are carried out at 5% level of significance. As a result of the fact that the dependent variable, Impact (of entrepreneurship education), involved continuous data that was analyzed with parametric statistical tools, the normality assumption and other basic assumptions need to be satisfied. The following table comes with the test of normality on the independent variable, Impact.

Table 1: Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Impact	.113	200	.000	.956	200	.000
a. Lilliefors Significance Correction						

Table 1 shows the Kolmogorov-Smirnov and Shapiro-Wilk tests of normality. Kolmogorov-Smirnov test applies to a sample size of more than 2000 whereas the Shapiro-Wilk test applies to smaller samples. As a result, the Shapiro-Wilk test is considered in this analysis. The null hypothesis is that data associated with the variable Impact are normally distributed. From the table, the test is significant at 5% level of significance (p = .000).

This means that the null hypothesis could be rejected. It can therefore be said that data associated with the independent variable are not normally distributed. This required data standardization to achieve normality. Normality of the independent variable was then met by taking their natural logarithm.

Table 2 comes with group statistics for impact of entrepreneurship education, with gender constituting the group. Table 2 is associated with Table 3 in testing the first null hypothesis, which states that "impact of entrepreneurship education is the same for males and females".

Table 2: Group Statistics (Impact by Gender)

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Impact	Female	100	4.0808	1.50045	.15004
	Male	100	6.6866	1.44850	.14485

Table 2 shows descriptive statistics associated with impact of entrepreneurship education across males and females. From the table, males had a higher level of impact (M = 6.69, SD = 1.45) relative to females (M = 4.08, SD = 1.50). Possibly, entrepreneurship education makes better impact on male students. But table 3 indicates through an independent student's (significance) t-test if the difference in these means is significant.

Table 3: Independent t Test (Impact by Gender)

		F	Sig	t	df	Sig. (2-Tailed)
Impact	Equal variances assumed	.005	.942	-12.495	198	.000
	Equal variances not assumed			-12.495	197.755	.000

Table 3 shows the independent t-test associated with the first null hypothesis. It indicates that there is a significant difference in the impact of entrepreneurship education across males and females, t (198) = -12.495, p = .000. Thus there is ample evidence that entrepreneurship education in Ghanaian polytechnics impacts better on males relative to females. It can also be said that gender influences impact of entrepreneurship education in Ghanaian polytechnics.

Table 4: Descriptive Statistics (Impact by Academic Capability)

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Low	60	3.0840	.72102	.09308	2.8977	3.2703
Average	80	5.5760	1.04542	.11688	5.3434	5.8086
High	60	7.4270	1.18120	.15249	7.1219	7.7321
Total	200	5.3837	1.96721	.13910	5.1094	5.6580

Table 4 is coupled with Tables 5, 6 and 7 in testing the second null hypothesis of this study. This hypothesis states that "impact of entrepreneurship education is the same across different levels of academic capability". This is tested using one-way Analysis of Variance (ANOVA). From the table, students with high academic capability had the highest impact (M = 7.42, SD = 1.97), followed with students with average academic capability (M = 5.58, SD = 1.05) and students with low academic capability (M = 3.08, SD = 0.72). Perhaps, academic capability influences impact of entrepreneurship education (i.e. impact differs across the three levels of academic capability). Yet, the F-statistics could confirm this as follows.

Table 5: Test of Homogeneity of Variances (Impact by Academic Capability)

Levene Statistic	df1	df2	Sig.
9.650	2	197	.000

Table 5 comes with a test of homogeneity of variances assumption. It tests the hypothesis that variances across the three groups of academic capability are equal or approximately equal. At 5% significance level, this test is significant (p = .000). This means that there is no homogeneity of variances. This would require that post hoc findings of this ANOVA test are based on the lack of homogeneity; thus if it shows a significant difference.

Table 6: ANOVA (Impact by Academic Capability)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	570.780	2	285.390	282.053	.000
Within Groups	199.331	197	1.012		
Total	770.111	199			

Table 6 comes with an F test for a difference in the impact of entrepreneurship education on the three levels of academic capability. The test is significant at 5% level of significance, F (2,197) = 285.39, p = .000. The second null hypothesis is therefore rejected. Hence, impact of entrepreneurship education differs across the three levels of academic capability. There is a higher likelihood that academic capability influences impact of entrepreneurship education. Table 7 is a multiple comparison test for this significance difference.

Table 7: Multiple Comparison (Impact and Academic Capability)

	(I) Academic Capability	(J) Academic Capability	Mean Difference (I-J)	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Tamhane	Low	Average	-2.49200*	.000	-2.8532	-2.1308
		High	-4.34300*	.000	-4.7770	-3.9090
	Average	Low	2.49200*	.000	2.1308	2.8532
		High	-1.85100*	.000	-2.3164	-1.3856
	High	Low	4.34300*	.000	3.9090	4.7770
		Average	1.85100*	.000	1.3856	2.3164

Table 7 is the Tamhane's multiple comparison test (a counterpart to Bonferroni multiple comparison test when there is no homogeneity of variances). It gives detail about the extent of the difference across the three levels of academic capability as revealed in Table 6. It can be seen that there is a significant difference in impact for each combination of the three levels of academic capability; Low*Average (p = .000), Low*High (p = .000) and Average*High (p = .000). This could mean that increased academic capability increases impact of entrepreneurship education.

Table 8: Group Statistics (Impact by Employment Status)

	Employment Status	N	Mean	Std. Deviation	Std. Error Mean
Impact	Employed	96	3.2111	1.50045	.15004
	Unemployed	104	7.0006	1.44850	.14485

Table 8 shows the group statistics for impact of entrepreneurship education, where the groups include "Employed" and "Unemployed" students. From the table, unemployed students had higher impact (M = 7.00, SD = 1.449) relative to employed students (M = 3.211, SD = 1.500). At a glance from the table, students who were not employed during their study in the polytechnics had better impact of entrepreneurship education. However, Table 9 would justify this claim.

Table 9: Independent t Test (Impact by Employment Status)

		F	Sig	t	df	Sig. (2-Tailed)
Impact	Equal variances assumed	.005	.942	-12.495	198	.000
	Equal variances not assumed			-12.495	197.755	.000

Table 9 shows an independent student's t-test for a difference between the two levels of employment status. The null hypothesis is that "there is no difference in the impact of entrepreneurship education on employed and unemployed students". From the table, this test is significant, t (198) = -12.495, p = .000. The third null hypothesis is therefore rejected. Hence, students who were not employed during their study of entrepreneurship in the polytechnics had a higher impact of entrepreneurship education. There is a higher likelihood that employment status affects entrepreneurship education.

Table 10: Descriptive Statistics (Impact by Financial Status)

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Low	58	3.1007	.72387	.09505	2.9104	3.2910
Average	87	5.5755	1.17179	.12563	5.3258	5.8253
High	55	7.4878	1.16389	.15694	7.1732	7.8025
Total	200	5.3837	1.96721	.13910	5.1094	5.6580

Table 10 shows descriptive statistics of impact of entrepreneurship education across the three levels of financial status. It appears that high income students had better impact of entrepreneurship education (M = 7.488, SD = 1.164), followed by average income students (M = 5.576, SD = 1.171) and low income students (M = 3.100, SD = 0.724). As to whether there is a significant difference in the impact of entrepreneurship education across the three levels of financial status would depend on findings of the following ANOVA test.

Table 11: Homogeneity of Variances (Impact by Financial Status)

Levene Statistic	df1	df2	Sig.
8.796	2	197	.000

Table 11 comes with test for homogeneity of variances across the three levels of financial status. This is done partly in testing the null hypothesis that impact of entrepreneurship education is the same across the three levels of financial status. From the table, there is no homogeneity of variances across the three levels (p = .000) at 5% significance level. This requires that the Tamhane Multiple Comparison test is used instead of Bonferroni Multiple Comparison should there be any need for a post hoc analysis.

Table 12: ANOVA (Impact by Financial Status)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	549.007	2	274.504	244.579	.000
Within Groups	221.103	197	1.122		
Total	770.111	199			

Table 12 is an ANOVA test for a difference in the impact of entrepreneurship education across the three levels of financial status. It can be seen that this test is significant at 0.05 level of significance, $F_{(2, 197)} = 244.579$, p = .000. The null hypothesis is therefore rejected. This means that there is a significant difference in the impact of entrepreneurship education across the three levels of financial status.

Table 13: Multiple Comparison (Impact by Financial Status)

	(I) Financial Status	(J) Financial Status	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Tamhane	Low	Average	-2.47483[*]	.15753	.000	-2.8555	-2.0942
		High	-4.38713[*]	.18348	.000	-4.8336	-3.9407
	Average	Low	2.47483[*]	.15753	.000	2.0942	2.8555
		High	-1.91230[*]	.20103	.000	-2.3994	-1.4252
	High	Low	4.38713[*]	.18348	.000	3.9407	4.8336
		Average	1.91230[*]	.20103	.000	1.4252	2.3994
*. The mean difference is significant at the 0.05 level.							

Table 13 is the Tamhane's Multiple Comparison test that explains the nature of the difference in Table 12. Evidently, low income students had a significantly lower impact relative to average (p = .000) and high (p = .000) income students. Moreover, high income students had a higher impact relative to average income students (p = .000). It is therefore likely that financial status is related to impact of entrepreneurial education.

Table 14: Descriptive Statistics (Impact by Parenting Status)

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
No parenting	67	3.3337	1.06479	.13009	3.0740	3.5935
Single parenting	89	5.8856	1.24756	.13224	5.6228	6.1484
Full parenting	44	7.4900	1.17266	.17679	7.1335	7.8465
Total	200	5.3837	1.96721	.13910	5.1094	5.6580

Table 14 indicates descriptive statistics that depict impact on entrepreneurship education across the three levels of parenting status. Students who had full parenting status had the highest impact (M = 7.490, SD 1.173), followed by students with single parenting status (M = 5.886, SD = 1.248) and students with no parenting status (M = 3.334, SD = 1.065). This table gives a clue about the fact that parenting situation of students influence impact of entrepreneurship education. Table 15 shows homogeneity of variances test, which is associated with the test of the null hypothesis that impact of entrepreneurship education is the same across the three levels of parenting status.

Table 15: Homogeneity of Variances (Impact by Parenting Status)

Levene Statistic	df1	df2	Sig.
2.372	2	197	.096

Table 15 is a test for homogeneity of variances across the three levels of parenting status. It is seen that there is homogeneity of variances across the three levels (p = .096) at 5% significancee level. This means that the homogeneity of variances assumption for ANOVA is satisfied.

Table 16: ANOVA (Impact by Parenting Status)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	499.186	2	249.593	181.489	.000
Within Groups	270.925	197	1.375		
Total	770.111	199			

Table 16 is the F-test for the statement that impact of entrepreneurship education is the same across the three levels of parenting status. This test, according to Table 16, is significant at 5% significance level, F (2, 197) = 181.489, p = .000. The null hypothesis is therefore not confirmed. Hence, there is a significant difference in the impact of entrepreneurship education across the three levels of parenting status.

Table 17: Multiple Comparisons (Impact by Parenting Status)

	(I) Parenting Status	(J) Parenting Status	Mean Difference (I-J)	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Bonferroni	No parenting	Single parenting	-2.55189[*]	.000	-3.0099	-2.0939
		Full parenting	-4.15627[*]	.000	-4.7057	-3.6068
	Single parenting	No parenting	2.55189[*]	.000	2.0939	3.0099
		Full parenting	-1.60438[*]	.000	-2.1262	-1.0825
	Full parenting	No parenting	4.15627[*]	.000	3.6068	4.7057
		Single parenting	1.60438[*]	.000	1.0825	2.1262
*. The mean difference is significant at the 0.05 level.						

Table 17 is a post hoc test (Bonferroni Multiple comparison). From this table, full parenting status students had the highest impact relative to single and no parenting status students at p = .000. Moreover, single parenting status students had better impact relative to no parenting status students at p = .000, when 5% is the level of significance.

Table 18: Group Statistics (Impact by Marital Status)

	Marital Status	N	Mean	Std. Deviation	Std. Error Mean
Impact	Married	100	4.0808	1.50045	.15004
	Not married	100	6.6866	1.44850	.14485

Table 18 shows group statistics that indicate impact of entrepreneurship education across the two levels of marital status. It seems that students who were not married had better impact (M = 6.687, SD = 1.449) relative to those who were married (M = 4.081, SD = 1.500). Table 19 shows if there is a significant difference between married and unmarried students with regard to the impact of entrepreneurship education.

Table 19: Independent t Test (Impact by Marital Status)

		F	Sig.	t	df	Sig. (2-Tailed)
Impact	Equal variances assumed	.005	.942	-12.495	198	0
	Equal variances not assumed			-12.495	197.755	.000

Table 19 shows dependent samples t-test. It tests the null hypothesis that there is no difference in the impact of entrepreneurship education across married and unmarried students. In the table, this test is significant at 5% level of significance, t (198) = -12.495, p = .000. The null hypothesis is therefore not confirmed. So, there is a significant difference in the impact of entrepreneurship education across the two levels of marital status.

Table 20: Descriptive Statistics (Impact by Type of Institution)

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Sunyani Polytechnic	32	3.0825	.70456	.12455	2.8285	3.3365
Takoradi Polytechnic	31	7.4423	1.17439	.21093	7.0115	7.8730
Kumasi Polytechnic	29	3.1897	.92691	.17212	2.8371	3.5422
Capecoast Polytechnic	31	5.5684	1.03973	.18674	5.1870	5.9498
Ho Polytechnic	22	5.5032	1.05486	.22490	5.0355	5.9709
Koforidua Polytechnic	28	5.6889	1.15467	.21821	5.2412	6.1367
Accra Polytechnic	27	7.4781	1.15436	.22216	7.0215	7.9348
Total	**200**	**5.3837**	**1.96721**	**.13910**	**5.1094**	**5.6580**

Table 20 indicates descriptive statistics that show impact of entrepreneurship education across the seven levels of type of institution (polytechnic). Students from Accra Pylytechnic had the highest impact (M = 7.478, SD 1.154), followed by students from Takoradi Polytechnic (M = 7.442, SD = 1.174). Students from Sunyani Polytechnic had the lowest impact (M = 3.083, SD = 0.705). This establishes a clue that impact of entrepreneurship education is not the same in all polytechnics. Tables 21 and 22 come with an ANOVA test that indicates if the difference in Table 20 is significant.

Table 21: Homogeneity of Variances (Impact by Type of Institution)

Levene Statistic	df1	df2	Sig.
2.404	6	193	.029

Table 21 is a test for homogeneity of variances across the seven levels of parenting status. It is seen that there is no homogeneity of variances across the seven levels. This means that the homogeneity of variances assumption for ANOVA is not satisfied.

Table 22: ANOVA (Impact by Type of Institution)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	562.847	6	93.808	87.352	.000

Table 22: Contd.,

Within Groups	207.264	193	1.074	
Total	**770.111**	**199**		

Table 22 is the F-test for the null hypothesis that impact of entrepreneurship education is the same in Ghanaian polytechnics. This test, according to Table 22, is significant at 5% significance level, $F_{(2, 193)} = 93.808$, $p = .000$. The null hypothesis is therefore not confirmed. Hence, there is a significant difference in the impact of entrepreneurship education across Ghanaian polytechnics.

In Table 25 of Appendix A is a post hoc test for findings in Table 22. In this table, impact of entrepreneurship education in Cape Coast Polytechnic is not significantly different from that of Koforidua Polytechnic ($p = 1.00$) and Ho Polytechnic ($p = 1.00$). Also, the impact of entrepreneurship education in Accra Polytechnic is not significantly different from that of Takoradi Polytechnic ($p = 1.00$). In Table 26 of Appendix B, the impact of entrepreneurship education on Kumasi Polytechnic is not significantly different from that of Sunni Polytechnic.

Table 23: Correlations (Impact by Gender, Academic Capability, Employment Status and Financial Status)

			Impact	Gender	Academic Capability	Employment Status	Financial Status
Kendall's tau_b	Impact	Correlation Coefficient	1.000	.543**	.718**	.543**	.705**
		Sig. (2-tailed)	.	.000	.000	.000	.000
		N	200	200	200	200	200
**. Correlation is significant at the 0.05 level (2-tailed).							

Table 23 shows Kendall's tau_b correlations between impact of entrepreneurship education and gender, academic capability, employment status and financial status. It can be seen that impact of entrepreneurship education is highly positively related to gender, $r(200) = 0.543$, $p = .000$; academic capability, $r(200) = 0.718$, $p = .000$; employment status, $r(200) = 0.543$, $p = .000$; and financial status, $r(200) = 0.705$, $p = .000$, at 5% significance level. This means that each of gender, academic capability, employment status and financial status affects impact of entrepreneurship education highly.

Table 24: Correlations (Impact by Parenting Status, Marital Status and Type of Institution)

			Impact	Parenting Status	Marital Status	Type of Institution
Kendall's tau_b	Impact	Correlation Coefficient	1.000	.665**	.543**	.342**
		Sig. (2-tailed)	.	.000	.000	.000
		N	200	200	200	200
**. Correlation is significant at the 0.01 level (2-tailed).						

Table 24 shows Kendall's tau_b correlations between impact of entrepreneurship education and parenting status, marital status and type of institution. It can be seen that impact of entrepreneurship education is highly positively related to parenting status, $r(200) = 0.665$, $p = .000$; marital status, $r(200) = 0.543$, $p = .000$; and type of institution, $r(200) = 0.342$, $p = .000$, at 0.05 significance level. This means that each of parenting status and marital status affects impact of entrepreneurship education strongly. Type of institution affects impact of entrepreneurship education weakly.

DISCUSSIONS

Considering findings in this study, it is worth saying that the primary hypothesis of the study is rejected at 5% significance level. Therefore, impact of entrepreneurship education is affected by each of gender, academic capability, employment status, financial status, parenting status, marital status and type of school. This implies that the potential of

entrepreneurship education in Ghanaian polytechnics in terms of equipping students with the practical ability to setup and manage businesses depends on gender of students; the academic ability of student; whether a student is employed or not; the financial ability of the student or his/her parents; the kind of parenting a student is involved in; whether a student is married or not; and the type of polytechnic the student attends. At the theoretical level, this finding is supported by Wegner, 2011, Mathews et al. 2003 and Costa & McCrae, 1991) in discussing the essence of the "Big five personality traits" and its model, Five Factor Model. Skinner (1963) also argued along the meaning of the Social Learning Theory in favor of this study's finding. At the empirical level, the investigation of Wilson & Peter (2006) showed that this study's biographic and personal attributes affect the effect of entrepreneurship education. There is therefore ample reliable evidence that impact of entrepreneurship education in Ghanaian polytechnics is influenced by the factors of gender, academic capability, employment status, financial status, parenting status, marital status and type of school.

CONCLUSIONS AND RECOMMENDATIONS

It is concluded that the impact of entrepreneurship education is affected by each of gender, academic capability, employment status, financial status, parenting status, marital status and type of school.

Therefore, students in Ghana can be better empowered to create jobs when entrepreneurship education is administered based on a consideration of these factors in: (1) entrepreneurship education designing curricula; (2) recruiting tutors for teaching entrepreneurship; (3) developing entrepreneurship teaching methods; (4) designing admission criteria and (5) acquiring entrepreneurship teaching materials. Findings of this study also suggest that institutions need to employ Psychologists heavily in planning and implementing schemes of entrepreneurship education. This is owing to the fact that these biographic and personal factors would be better understood and considered in granting entrepreneurship education when they are reckoned from a psychological viewpoint.

Future researchers are encouraged to investigate the affect of factors such as race, culture, religion and the like on the impact of entrepreneurship education. This study could not consider these factors owing to data unavailability on them. Meanwhile Wegner's (2011) interpretation of the Big Five Model and Skinner's (1963) interpretation of the Social Learning Theory recognize these factors as determinants of impact of entrepreneurship education.

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APPENDICES

APPENDIX A

Table 25: Tamhane Multiple Comparison (Impact by Type of Institution) – Block 1

(I) Type of Institution	(J) Type of Institution	Mean Difference (I-J)	Sig.
Capecoast Polytechnic	Accra Polytechnic	-4.28849[*]	.000
	Sunyani Polytechnic	2.48589[*]	.000
	Takoradi Polytechnic	-1.87387[*]	.000
	Kumasi Polytechnic	2.37873[*]	.000
	Ho Polytechnic	.06521	1.000
	Koforidua Polytechnic	-.12054	1.000
Ho Polytechnic	Accra Polytechnic	-1.90976[*]	.000
	Sunyani Polytechnic	2.42068[*]	.000
	Takoradi Polytechnic	-1.93908[*]	.000
	Kumasi Polytechnic	2.31353[*]	.000
	Capecoast Polytechnic	-.06521	1.000
	Koforidua Polytechnic	-.18575	1.000
Koforidua Polytechnic	Accra Polytechnic	-1.97497[*]	.000
	Sunyani Polytechnic	2.60643[*]	.000
	Takoradi Polytechnic	-1.75333[*]	.000
	Kumasi Polytechnic	2.49927[*]	.000
	Capecoast Polytechnic	.12054	1.000
	Ho Polytechnic	.18575	1.000

	Accra Polytechnic	-1.78922*	.000
Accra Polytechnic	Sunyani Polytechnic	4.39565*	.000
	Takoradi Polytechnic	.03589	1.000
	Kumasi Polytechnic	4.28849*	.000
	Capecoast Polytechnic	1.90976*	.000
	Ho Polytechnic	1.97497*	.000
	Koforidua Polytechnic	1.78922*	.000
*. The mean difference is significant at the 0.05 level.			

APPENDIX B

Table 26: Tamhane Multiple Comparison (Impact by Type of Institution) – Block 2

(I) Type of Institution	(J) Type of Institution	Mean Diffrences (I-J)	Sig.
Sunyani Polytechnic	Takoradi Polytechnic	-4.35976*	.000
	Kumasi Polytechnic	-.10716	1.000
	Capecoast Polytechnic	-2.48589*	.000
	Ho Polytechnic	-2.42068*	.000
	Koforidua Polytechnic	-2.60643*	.000
	Accra Polytechnic	-4.39565*	.000
Takoradi Polytechnic	Sunyani Polytechnic	4.35976*	.000
	Kumasi Polytechnic	4.25260*	.000
	Capecoast Polytechnic	1.87387*	.000
	Ho Polytechnic	1.93908*	.000
	Koforidua Polytechnic	1.75333*	.000
	Accra Polytechnic	-.03589	1.000
Kumasi Polytechnic	Sunyani Polytechnic	.10716	1.000
	Takoradi Polytechnic	-4.25260*	.000
	Capecoast Polytechnic	-2.37873*	.000
	Ho Polytechnic	-2.31353*	.000
	Koforidua Polytechnic	-2.49927*	.000
	Accra Polytechnic	-4.28849*	.000